

Appl. No. 10/656,098
AMENDMENT FILED CONCOMITANT WITH RCE

REMARKS/ARGUMENTS

Claims 1-13 are rejected under 35 USC 112, second paragraph, as indefinite because an Example in the specification is outside the scope of the claims. The second paragraph of 35 USC 112 requires that the claims particularly point out and distinctly claim the subject matter which applicant regards as his invention. There is no requirement that the claims encompass all of the Examples. Nor does 35 USC 112, second paragraph, have requirements with respect to the specification. Since the claim language is clear on its face, withdrawal of the rejection is requested.

Furthermore, the amendment hereinabove proposes to delete the Example which is inconsistent with the Examiner's interpretation of the claim, based on the inconsistency.

The art related rejections are being maintained, all of which rely on the Examiner's interpretation of Inoue and the Examiner's misunderstanding of the subject matter. Based on the Examiner's interpretation, the Examiner considers that applicants' arguments are not persuasive because they are contradictory to the original disclosure. Applicants respectfully disagree with the Examiner's interpretation of the

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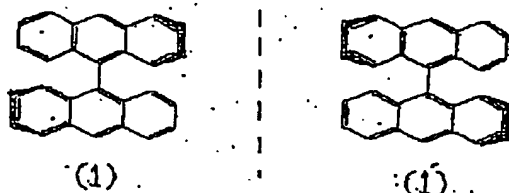
disclosure. Reconsideration of the rejections in view of the following, is respectfully requested.

As described in the specification (last paragraph on page 24), the basic skeleton is "basic skeleton structure of the substituent having a biaryl group which has the axis capable of giving the internal rotation isomerism". The substituent having the biaryl group is formed by removing one hydrogen from the compound of the basic skeleton structure.

An internal rotational isomerism, as is well known in the art and also described in the earlier response and arguments, is a type of stereoisomerism that may arise in systems where free rotation about a single covalent bond is impeded sufficiently so as to allow different stereoisomers (enantiomers) to be isolated. As previously explained, the enantiomers are molecules that are mirror images of one another, that is nonsuperimposable mirror images. Thus, these different stereoisomers (enantiomers) are correlated to nonsuperimposable mirror images.

First, we note the sixth formula on page 25, which is 9,9'-bianthracene. As is known in the art, in 9,9'-bianthracene, free rotation is inhibited about the 9,9'-bond so that both anthracene nucleuses are not coplanar. Conformation of 9,9'-bianthracene (1) and its mirror image (1") are illustrated below:

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As can be seen from therefrom, (1) and (1') are superimposable and therefore are identical in conformation, that is, enantiomerism is impossible in 9,9'-anthracene. In other words, 9,9'-anthracene, shown as one of exemplified skeleton structures, has no axis capable of giving the internal rotation isomerism.

The Examiner further notes the compound of formula A-16 on page 39 of the specification (second paragraph on page 5 of the Office Action). The Examiner states that since all biaryl groups of the compound of formula A-16 are 9,9'-bianthracene-10,10'-diyl groups, a 9,9'-bianthracene-10,10-diyl group must meet the limitation of a biaryl group having a bond capable of giving at least two internal rotational isomerism. However, the Examiner is incorrect. All biaryl groups of A-16 are 9,9'-bianthracene-10-yl groups. Therefore, this 9,9'-bianthracene-10-yl group must meet the limitations of a

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biaryl group having a bond capable of giving at least two internal rotation isomerisms. In fact, in this 9,9'-bianthracene-10-yl group, free rotation about the 9,9'-bond is hindered and mirror images that are not superimposable exist.

This 9,9'-bianthracene-10-yl group may be further substituted. In 9,9'-bianthracene-10,10'-yl group, for example, in the compound represented by formula (2), as described in the AMENDMENT filed November 30, 2005, its mirror images are superimposable although free rotation is hindered about the 9,9'-bond. Accordingly, it was concluded that enantiomerism was impossible in this compound (2). Therefore, it is submitted that the 9,9'-bianthracene-10,10'-diyl included Inoue's compound VII-21 is not a biaryl having a bond capable of giving an internal rotation isomerism.

The Examiner cites new art. Shi teaches that in 9,10-bis(3'5'-diaryl)phenyl anthracene molecule, it would exist a series of non-interconverting atropisomers due to the existence of the two phenyl-anthracene and four phenylaryl groups which have large energy barriers to internal rotation. However, Shi does not describe any more with respect to the existence of atropisomers. In view of the teaching by Shi, the Examiner asserts that it is apparent that it is possible for some molecules to exhibit atropisomerism even though those molecules

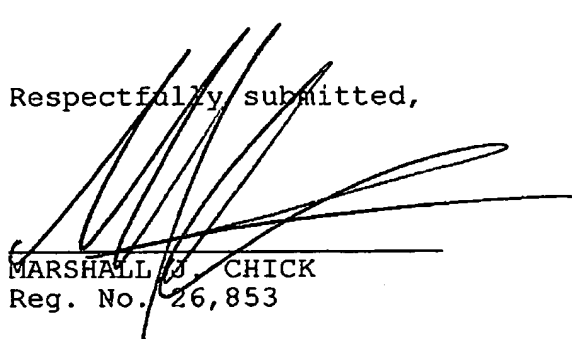
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can, on paper, be drawn as having mirror images that are superimposable. However, such Examiner's interpretation seems to be incorrect. If mirror images of one molecule are superimposable with each other, these mirror images apparently are the same one. Thus, it means that this molecule exhibits a single conformation and no isomerism having different conformations exists in this molecule. Based on the foregoing reasoning, the Examiner's assertion is not correct. It is therefore submitted that the Examiner's rejection is not supported by the cited art combination even when the new art is considered.

In view of the above, it is submitted that the present invention is not shown or suggested by the cited art. Withdrawal of the rejections and allowance of the application are respectfully requested.

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